

IN THE CLAIMS:

Please CANCEL claims 45-52 and 105-121 without prejudice to or disclaimer of the recited subject matter.

Please ADD new claims 122-147, as follows. For the Examiner's convenience, all the claims currently pending in this application, including those not currently being amended, have been reproduced below.

1-121. (Cancelled).

122. (New) An exposure apparatus comprising:

an optical system for directing light from a light source via a mask and for projecting a pattern of the mask onto a wafer;

a barrel for accommodating therein at least a part of said optical system;

a cover for suppressing diffusion of a gas in a space around an outermost one of surfaces of optical elements accommodated in said barrel;

a supply system for supplying a gas into the space, said supply system having a supply port which faces to the outermost surface rather than in a direction perpendicular to a direction of an optical axis of said optical system; and

an exhaust system for exhausting a gas from the space, said exhaust system having an exhaust port which is more distant from the outermost surface than is said supply port.

123. (New) An apparatus according to Claim 122, wherein said supply system comprises a plurality of said support ports, which are disposed in rotational symmetry with respect to the optical axis.

124. (New) An apparatus according to Claim 122, further comprising adjusting means for adjusting at least one of a flow rate and a pressure of the gas supplied by said supply system and a flow rate and a pressure of the gas exhausted by said exhaust system, in accordance with a state of operation of said apparatus.

125. (New) An apparatus according to Claim 122, further comprising temperature adjusting means for adjusting a temperature of the gas supplied by said supply system.

126. (New) An apparatus according to Claim 122, wherein the outermost surface corresponds to a last surface of a projection optical system for projecting the pattern of the mask onto the wafer.

127. (New) An apparatus according to Claim 122, wherein the outermost surface corresponds to a surface of an optical element in an illumination optical system for illuminating the mask.

128. (New) An apparatus according to Claim 122, wherein the gas supplied by said supply system is an inactive gas.

129. (New) An apparatus according to Claim 122, wherein the light is ultraviolet light.

130. (New) A device manufacturing method comprising the steps of:

exposing a wafer to a pattern by use of an exposure apparatus as recited in Claim 122; and

developing the exposed wafer.

131. (New) An exposure apparatus comprising:

an optical system for directing light from a light source via a mask and for projecting a pattern of the mask onto a wafer;

a barrel for accommodating therein at least a part of said optical system;

a supply system for supplying a gas into said barrel;

an exhaust port for exhausting a gas from said barrel;

a cover for suppressing diffusion of a gas in a space around an outermost one of surfaces of optical elements accommodated in said barrel; and

a supply port for supplying, into the space, the gas exhausted from said barrel via said exhaust port.

132. (New) An apparatus according to Claim 131, wherein said apparatus has a plurality of said supply ports, which are disposed in rotational symmetry with respect to the optical axis.

133. (New) An apparatus according to Claim 131, further comprising adjusting means for adjusting at least one of a flow rate and a pressure of the gas supplied by said supply system, in accordance with a state of operation of said apparatus.

134. (New) An apparatus according to Claim 131, further comprising temperature adjusting means for adjusting a temperature of the gas supplied by said supply system.

135. (New) An apparatus according to Claim 131, wherein the outermost surface corresponds to a last surface of a projection optical system for projecting the pattern of the mask onto the wafer.

136. (New) An apparatus according to Claim 131, wherein the outermost surface corresponds to a surface of an optical element in an illumination optical system for illuminating the mask.

137. (New) An apparatus according to Claim 131, wherein the gas supplied by said supply system is an inactive gas.

138. (New) An apparatus according to Claim 131, wherein the light is ultraviolet light.

139. (New) A device manufacturing method comprising the steps of:

exposing a wafer to a pattern by use of an exposure apparatus as recited in Claim 131; and

developing the exposed wafer.

140. (New) An exposure apparatus comprising:

an optical system for directing light from a light source via a mask and for projecting a pattern of the mask onto a wafer;

a barrel for accommodating therein at least a part of said optical system;

a cover for suppressing diffusion of a gas in a space around an outermost one of surfaces of optical elements accommodated in said barrel;

a supply system for supplying a gas into the space, said supply system having a supply port which faces in a direction according to a shape of the outermost surface so that the gas flows along the outermost surface; and

an exhaust system for exhausting, from the space, the gas having traveled along the outermost surface.

141. (New) An apparatus according to Claim 140, wherein said supply system comprises a plurality of said supply ports.

142. (New) An apparatus according to Claim 140, further comprising temperature adjusting means for adjusting a temperature of the gas supplied by said supply system.

143. (New) An apparatus according to Claim 140, wherein the outermost surface corresponds to a last surface of a projection optical system for projecting the pattern of the mask onto the wafer.

144. (New) An apparatus according to Claim 140, wherein the outermost surface corresponds to a surface of an optical element in an illumination optical system for illuminating the mask.

145. (New) An apparatus according to Claim 140, wherein the gas supplied by said supply system is an inactive gas.

146. (New) An apparatus according to Claim 140, wherein the light is ultraviolet light.

147. (New) A device manufacturing method comprising the steps of:

exposing a wafer to a pattern by use of an exposure apparatus as recited in Claim 140; and
developing the exposed wafer.